

## ABSTRACT

The future step of Broadband Technology is interconnection between Wi-Fi (Wireless Fidelity) dan WiMAX (Worldwide Interoperability for Microwave Access). WiMAX on the future will not be the competitor or even replacing Wi-Fi network which is still developing. Wi-Fi and WiMAX together can be complement in shaping Next Generation Network. Mobile Internet Protocol (MIP) technology is capable to realize this idea, because both of them are based on IP technology, although Roaming and Handover factor will be its problem. MIP allows Mobile Node (MN) or user to change their IP address every time, but the application will not restart or stopped after that.

The research modeling is in the downlink direction, where *Correspondent Node (CN)* send data to MN in mobile WiMAX network, but while sending the data, MN does handover into Wi-Fi network. The interworking system analyze and evaluation done by protocol, where every protocol that involved in communication data in mobile WiMAX, Wi-Fi Network also MIPv6 process will be analyzed.

Analysis interworking system shows that RADIUS protocol is involved in Authorization, Authentication, Accounting (AAA) between MN with mobile WiMAX and Wi-Fi Network MIPv6 *routing header* changes the destination address in IPv6 header from MN CoA into MN HoA when packet accepted in MN, so the replacement of IP address process is undetected by system. The interworking system analyze and evaluation result shows that the data communication at the begining are not giving maximum performance, because the system must do *CoA* addressing, Binding Update-Acknowledge (BU-BA) MN with Home Agent (HA), also BU-BA MN with CN. This interworking system give maximum performance when the CN are capable to communicate directly with MN without involving HA.